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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/838,862

04/20/2001

Tarek Abd Elazim Ramadan

A32562-070050.1370

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03/09/2006

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NEW YORK, NY 10112-4498

EXAMINER

RAHLL, JERRY T

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/838,862

Applicant(s)

RAMADAN

Examiner

Jerry T. Rahll

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/1/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.
2. The oath or declaration is defective because it lists priority to provisional application 06/156,210. This is incorrect. Also, the examiner notes that a reference to any prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e) or 120. See 37 CFR 1.78(a).

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 01 December 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

4. Applicant's arguments, filed 01 December 2005, with respect to the rejection(s) of claim(s) 1-20 and 30 under "A Novel 1x4 Coupler-Multiplexer Permutation Switch for WDM Applications" by Ramadan et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent No. 6,571, 031 to Augustsson, see below.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,571,031 to Augustsson.

7. Augustsson describes a switch (1) for switching wavelength division multiplexed signals from one or more optical waveguides including a single-mode to multi mode backward coupler (sections B –D in Figure 1) for receiving a wavelength division multiplexed signal (25) from a waveguide (23) and for backward coupling the signals in a plurality of single-mode signals (at 43, 45, 47, 49), each having a unique mode (see Columns 4-6).

8. Augustsson does not specifically describe the single-mode to multi-mode backward coupler coupled to the surface of a substrate. However, MMI couplers, such as the one described by Augustsson, are almost always formed coupled to a substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to form the MMI coupler of Augustsson coupled to the surface of a substrate. The motivation for doing so would have been to use well-known manufacturing techniques.

9. Further, Augustsson does not specifically describe the input and output signals as single-mode. However, it is well-known in the art that multiplexed signals are commonly transmitted in a single mode. It is also well-known that individual de-multiplexed signals are commonly transmitted in a single mode. Therefore, it would have been obvious to one of ordinary skill in

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the art at the time of invention to transmit the entering multiplexed signal and the exiting demultiplexed signals in single modes. The motivation for doing so would have been to reduce transmission losses common to multi-mode transmission.

Allowable Subject Matter

10. Claim 30 is allowed. Claims 2-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 2-20 describe the single-mode to multi-mode backward coupler including a receiving layer, a separation layer, and a multi-mode waveguide, where the a first surface of the separation layer is coupled to the receiving layer and a second surface of the separation layer is coupled toe the multi-mode waveguide. Augustsson does not describe such a layer structure for the MMI coupler.

12. Claim 30 describes plurality of digital optical switches, each having a plurality of output waveguides, optically coupled with single mode waveguides that are, in turn, optically coupled with a common single-mode to multi-mode backward coupler. Augustsson does not describe a plurality of digital optical switches coupled to single-mode waveguides.

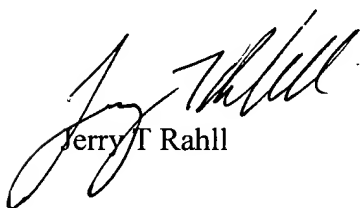
Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T. RahlI whose telephone number is (571) 272-2356. The examiner can normally be reached on M-Th (8:30-5:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jerry T. Rahll


MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER
3/6/06